

10/806063

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L * * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 14:33:00 ON 05 MAY 2008

=> file ca

=> s heteropoly acid

11855 HETEROPOLY

4500310 ACID

L1 3671 HETEROPOLY ACID
(HETEROPOLY(W)ACID)

=> s silicotungst? or phosphotungs? or phosphomolybdi? or vanadotungs?

1933 SILICOTUNGST?

6621 PHOSPHOTUNGS?

3086 PHOSPHOMOLYBDI?

121 VANADOTUNGS?

L2 10426 SILICOTUNGST? OR PHOSPHOTUNGS? OR PHOSPHOMOLYBDI? OR VANADOTUNGS
?

=> s l1 and l2

L3 737 L1 AND L2

=> s support and l3

457741 SUPPORT

L4 97 SUPPORT AND L3

=

=> d his

(FILE 'HOME' ENTERED AT 14:33:00 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:33:11 ON 05 MAY 2008

L1 3671 S HETEROPOLY ACID

L2 10426 S SILICOTUNGST? OR PHOSPHOTUNGS? OR PHOSPHOMOLYBDI? OR VANADOTU

L3 737 S L1 AND L2

L4 97 S SUPPORT AND L3

=> s l4 and cat?

2603699 CAT?

L5 94 L4 AND CAT?

=> d 94 kwic

L5 ANSWER 94 OF 94 CA COPYRIGHT 2008 ACS on STN

TI Alkylation of aromatic hydrocarbons using a supported heteropoly
acid catalyst

AB High conversions in the alkylation of aromatic hydrocarbons with olefin

compsds. were obtained by using a W-containing heteropoly acid deposited on a support containing at least 50 weight % SiO₂ at 150-400°F. Thus, a 9:1 C₆H₆-1-dodecene was passed downflow through a bed of 10-20 mesh granules of a catalyst consisting of 20 weight % silicotungstic acid on a SiO₂ gel support at 250°F. and 500 psig. The dodecene conversion to alkylated benzene was 98.6 weight %, compared to 3. 7% when SiO₂ gel was replaced by Al₂O₃, and 89.1% when the catalyst support was 90:10 SiO₂ gel-al₂O₃.

- IT Olefins, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (alkylation by, of aromatic hydrocarbons, catalysts for, tungstophosphoric acid and tungstosilicic acid as)
- IT Hydrocarbons, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (alkylation of aromatic, with olefins, catalysts for, tungstophosphoric acid and tungstosilicic acid as)
- IT Alkylation catalysts
 (tungstophosphoric acid and tungstosilicic acid as, for aromatic hydrocarbons with olefins)
- IT Tungstophosphoric acid
 Tungstosilicic acid
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts, for alkylation of aromatic hydrocarbons with olefins)
- IT 71-43-2, reactions
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (alkylation of, with 1-dodecene, catalysts for, tungstophosphoric acid and tungstosilicic acid as)
- IT 112-41-4
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (benzene alkylation with, catalysts for, tungstophosphoric acid and tungstosilicic acid as)

=> d ibib 94

L5 ANSWER 94 OF 94 CA COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 68:77941 CA
 ORIGINAL REFERENCE NO.: 68:15027a,15030a
 TITLE: Alkylation of aromatic hydrocarbons using a supported heteropoly acid catalyst
 INVENTOR(S): Henke, Alfred M.; Sebalsky, Raynor T.
 PATENT ASSIGNEE(S): Gulf Research and Development Co.
 SOURCE: U.S., 5 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 3346657		19671010	US 1964-422444	19641230

=> d his

(FILE 'HOME' ENTERED AT 14:33:00 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:33:11 ON 05 MAY 2008

L1 3671 S HETEROPOLY ACID
 L2 10426 S SILICOTUNGST? OR PHOSPHOTUNGST? OR PHOSPHOMOLYBDI? OR VANADOTU
 L3 737 S L1 AND L2
 L4 97 S SUPPORT AND L3
 L5 94 S L4 AND CAT?

=> s picolin? and l5

23538 PICOLIN?

L6 1 PICOLIN? AND L5

=> d ibib abs kwic

L6 ANSWER 1 OF 1 CA COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 143:117138 CA

TITLE: Catalyst for synthesis of 2- and 4-
 picolines, process for preparing 2- and 4-
 picoline and process for preparing the
 catalyst

INVENTOR(S): Dutta, Pashupati; Roy, Subhash Chandra; Roy, Shyam
 Kishor; Goswami, Tarun Kanti

PATENT ASSIGNEE(S): Council of Scientific & Industrial Research, India
 SOURCE: PCT Int. Appl., 10 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

Patent

LANGUAGE:

English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063389	A1	20050714	WO 2003-IN467	20031231
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2552158	A1	20050714	CA 2003-2552158	20031231
AU 2003300723	A1	20050721	AU 2003-300723	20031231
EP 1708811	A1	20061011	EP 2003-819218	20031231
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
CN 1886195	A	20061227	CN 2003-80110944	20031231
IN 2004DN00489	A	20060310	IN 2004-DN489	20040227
US 20050209458	A1	20050922	US 2004-806063	20040322
PRIORITY APPLN. INFO.:			WO 2003-IN467	W 20031231

OTHER SOURCE(S): CASREACT 143:117138

AB Title catalyst comprises a heteropoly acid
 selected from the group consisting of silicotungstic acid,

phosphotungstic acid, phosphomolybdic acid and vanadotungstic acid provided on a support. The support is selected from the group consisting of silica gel, alumina, silica-alumina, clays and montmorillonite. The invention also provides a process for the preparation thereof and use thereof for the synthesis of 2- and 4-picolines useful as intermediates for pharmaceuticals and agrochemicals.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

- TI Catalyst for synthesis of 2- and 4-picolines, process for preparing 2- and 4-picoline and process for preparing the catalyst
- AB Title catalyst comprises a heteropoly acid selected from the group consisting of silicotungstic acid, phosphotungstic acid, phosphomolybdic acid and vanadotungstic acid provided on a support. The support is selected from the group consisting of silica gel, alumina, silica-alumina, clays and montmorillonite. The invention also provides a process for the preparation thereof and use thereof for the synthesis of 2- and 4-picolines useful as intermediates for pharmaceuticals and agrochemicals.
- ST catalyst silicotungstic phosphotungstic phosphomolybdic vanadotungstic acid picoline process
- IT Clays, uses
Silica gel, uses
RL: CAT (Catalyst use); USES (Uses)
(support; production of catalyst for synthesis of 2- and 4-picolines from acetyldehyde and ammonia)
- IT 1343-93-7, Phosphotungstic acid 12026-57-2, Phosphomolybdic acid 12027-38-2, Silicotungstic acid 857501-33-8, Vanadotungstic acid
RL: CAT (Catalyst use); USES (Uses)
(production of catalyst for synthesis of 2- and 4-picolines from acetyldehyde and ammonia)
- IT 108-89-4P, 4-Picoline 109-06-8P, 2-Picoline
RL: IMF (Industrial manufacture); PREP (Preparation)
(production of catalyst for synthesis of 2- and 4-picolines from acetyldehyde and ammonia)
- IT 75-07-0, Acetaldehyde, reactions 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(starting material; production of catalyst for synthesis of 2- and 4-picolines from acetyldehyde and ammonia)
- IT 1318-93-0, Montmorillonite, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 159995-97-8, Aluminum silicon oxide
RL: CAT (Catalyst use); USES (Uses)
(support; production of catalyst for synthesis of 2- and 4-picolines from acetyldehyde and ammonia)

=> d his

(FILE 'HOME' ENTERED AT 14:33:00 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:33:11 ON 05 MAY 2008

L1 3671 S HETEROPOLY ACID
L2 10426 S SILICOTUNGST? OR PHOSPHOTUNGS? OR PHOSPHOMOLYBDI? OR VANADOTU

L3 737 S L1 AND L2
 L4 97 S SUPPORT AND L3
 L5 94 S L4 AND CAT?
 L6 1 S PICOLIN? AND L5

=> s acetaldehy? and ammon?

46901 ACETALDEHY?

623204 AMMON?

L7 2922 ACETALDEHY? AND AMMON?

=> s l7 and l5

L8 1 L7 AND L5

=> d ibib

L8 ANSWER 1 OF 1 CA COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 143:117138 CA

TITLE: Catalyst for synthesis of 2- and 4-picolines, process for preparing 2- and 4-picoline and process for preparing the catalyst

INVENTOR(S): Dutta, Pashupati; Roy, Subhash Chandra; Roy, Shyam Kishor; Goswami, Tarun Kanti

PATENT ASSIGNEE(S): Council of Scientific & Industrial Research, India

SOURCE: PCT Int. Appl., 10 pp.

CODEN: PIXXD2

DOCUMENT TYPE:

LANGUAGE: Patent

FAMILY ACC. NUM. COUNT: English

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063389	A1	20050714	WO 2003-IN467	20031231
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2552158	A1	20050714	CA 2003-2552158	20031231
AU 2003300723	A1	20050721	AU 2003-300723	20031231
EP 1708811	A1	20061011	EP 2003-819218	20031231
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
CN 1886195	A	20061227	CN 2003-80110944	20031231
IN 2004DN00489	A	20060310	IN 2004-DN489	20040227
US 20050209458	A1	20050922	US 2004-806063	20040322
PRIORITY APPLN. INFO.:			WO 2003-IN467	W 20031231

OTHER SOURCE(S): CASREACT 143:117138

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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(FILE 'HOME' ENTERED AT 14:33:00 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:33:11 ON 05 MAY 2008

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L1      3671 S HETEROPOLY ACID
L2      10426 S SILICOTUNGST? OR PHOSPHOTUNGST? OR PHOSPHOMOLYBDI? OR VANADOTU
L3      737 S L1 AND L2
L4      97 S SUPPORT AND L3
L5      94 S L4 AND CAT?
L6      1 S PICOLIN? AND L5
L7      2922 S ACETALDEHY? AND AMMON?
L8      1 S L7 AND L5

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---Logging off of STN---

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NEWS 4 JAN 28 USPATFULL, USPAT2, and USPATOLD enhanced with new
               custom IPC display formats
NEWS 5 JAN 28 MARPAT searching enhanced
NEWS 6 JAN 28 USGENE now provides USPTO sequence data within 3 days
               of publication
NEWS 7 JAN 28 TOXCENTER enhanced with reloaded MEDLINE segment
NEWS 8 JAN 28 MEDLINE and LMEEDLINE reloaded with enhancements
NEWS 9 FEB 08 STN Express, Version 8.3, now available
NEWS 10 FEB 20 PCI now available as a replacement to DPCI
NEWS 11 FEB 25 IFIREF reloaded with enhancements
NEWS 12 FEB 25 IMSPRODUCT reloaded with enhancements
NEWS 13 FEB 29 WPINDEX/WPIDS/WPIX enhanced with ECLA and current
               U.S. National Patent Classification
NEWS 14 MAR 31 IFICDB, IFIPAT, and IFIUDB enhanced with new custom
               IPC display formats
NEWS 15 MAR 31 CAS REGISTRY enhanced with additional experimental
               spectra
NEWS 16 MAR 31 CA/Caplus and CASREACT patent number format for U.S.
               applications updated
NEWS 17 MAR 31 LPCI now available as a replacement to LDPCI
NEWS 18 MAR 31 EMBASE, EMBAL, and LEMBASE reloaded with enhancements
NEWS 19 APR 04 STN AnaVist, Version 1, to be discontinued
NEWS 20 APR 15 WPIDS, WPINDEX, and WPIX enhanced with new
               predefined hit display formats
NEWS 21 APR 28 EMBASE Controlled Term thesaurus enhanced

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NEWS 22 APR 28 IMSRESEARCH reloaded with enhancements

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FILE 'HOME' ENTERED AT 14:37:22 ON 05 MAY 2008

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=> d his

(FILE 'HOME' ENTERED AT 14:37:22 ON 05 MAY 2008)

=> file ca

=> s acetaldehy?

L1 46906 ACETALDEH?

=> s nh3 or ammon?

275279 NH3

623204 AMMON?

L2 775574 NH3 OR AMMON?

=> s l1 and l2

L3 3622 L1 AND L2

=> s l3 and picolin?

23538 PICOLIN?

L4 182 L3 AND PICOLIN?

=> s l4 and heteropol?

18571 HETEROPOL?

L5 1 L4 AND HETEROPOL?

=> d ibi

L5 ANSWER 1 OF 1 CA COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 143:117138 CA

TITLE: Catalyst for synthesis of 2- and 4-picolines
, process for preparing 2- and 4-picoline
and process for preparing the catalyst

INVENTOR(S): Dutta, Pashupati; Roy, Subhash Chandra; Roy, Shyam
Kishor; Goswami, Tarun Kanti

PATENT ASSIGNEE(S): Council of Scientific & Industrial Research, India
 SOURCE: PCT Int. Appl., 10 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063389	A1	20050714	WO 2003-IN467	20031231
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
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EP 1708811	A1	20061011	EP 2003-819218	20031231
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CN 1886195	A	20061227	CN 2003-80110944	20031231
IN 2004DN00489	A	20060310	IN 2004-DN489	20040227
US 20050209458	A1	20050922	US 2004-806063	20040322
PRIORITY APPLN. INFO.:			WO 2003-IN467	W 20031231
OTHER SOURCE(S):	CASREACT 143:117138			
REFERENCE COUNT:	3	THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

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(FILE 'HOME' ENTERED AT 14:37:22 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:37:31 ON 05 MAY 2008

L1 46906 S ACETALDEH?
 L2 775574 S NH3 OR AMMON?
 L3 3622 S L1 AND L2
 L4 182 S L3 AND PICOLIN?
 L5 1 S L4 AND HETEROPOL?

=> s silicotungst? or phosphotungs? or phosphomolybd? or vanadotungst?

1933 SILICOTUNGST?
 6621 PHOSPHOTUNGST?
 5513 PHOSPHOMOLYBD?
 121 VANADOTUNGST?
 L6 12670 SILICOTUNGST? OR PHOSPHOTUNGST? OR PHOSPHOMOLYBD? OR VANADOTUNGST?
 ?

=> s 16 and 14

L7 1 L6 AND L4

=> d ibib

L7 ANSWER 1 OF 1 CA COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 143:117138 CA
 TITLE: Catalyst for synthesis of 2- and 4-picolines
 , process for preparing 2- and 4-picoline
 and process for preparing the catalyst
 INVENTOR(S): Dutta, Pashupati; Roy, Subhash Chandra; Roy, Shyam
 Kishor; Goswami, Tarun Kanti
 PATENT ASSIGNEE(S): Council of Scientific & Industrial Research, India
 SOURCE: PCT Int. Appl., 10 pp.
 CODEN: PIXXD2
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005063389	A1	20050714	WO 2003-IN467	20031231
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CA 2552158	A1	20050714	CA 2003-2552158	20031231
AU 2003300723	A1	20050721	AU 2003-300723	20031231
EP 1708811	A1	20061011	EP 2003-819218	20031231
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
CN 1886195	A	20061227	CN 2003-80110944	20031231
IN 2004DN00489	A	20060310	IN 2004-DN489	20040227
US 20050209458	A1	20050922	US 2004-806063	20040322
PRIORITY APPLN. INFO.:			WO 2003-IN467	W 20031231
OTHER SOURCE(S):	CASREACT 143:117138			
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L1 46906 S ACETALDEH?
 L2 775574 S NH3 OR AMMON?
 L3 3622 S L1 AND L2
 L4 182 S L3 AND PICOLIN?
 L5 1 S L4 AND HETEROPOL?
 L6 12670 S SILICOTUNGST? OR PHOSPHOTUNGS? OR PHOSPHOMOLYBD? OR VANADOTUN
 L7 1 S L6 AND L4

=> s l4 and catalyst?
 992995 CATALYST?
 L8 132 L4 AND CATALYST?

=> s l8 and py<2004
 22767171 PY<2004
 L9 121 L8 AND PY<2004

=> d kwic

L9 ANSWER 1 OF 121 CA COPYRIGHT 2008 ACS on STN

TI Gas phase process for the preparation of (substituted) pyridine from acetaldehyde, formaldehyde, and ammonia in the presence of zeolite based catalysts.

PI IN 191258 A1 20031018

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	IN 191258	A1	20031018	IN 1996-DE684	19960629 <--
AB	A process for the preparation of (substituted) pyridine comprises heating MeCHO 25-29 weight%, H ₂ CO 15-18 weight%, H ₂ O 27-32 weight%, NH ₃ 18-21 weight% and MeOH 0-15 weight% at 300-400°, contacting the gaseous reactants with a zeolite based catalyst having a silica/alumina ratio >12 and containing 1-6% of a mixture of oxides of metals of Group II, III, IV. . . aprotic organic solvent and separating the organic layer. Thus, a mixture of MeCHO and				

H₂CO in H₂O, and sep. gaseous NH₃ were fed to a tube reactor packed with HZSM-5 at 450° to give pyridine bases in avg. yield of 69.31 mol% comprising 59.3% pyridine and 3-picoline.

ST pyridine prepn; acetaldehyde formaldehyde ammonia gas phase reaction zeolite catalyst

IT Cyclocondensation reaction
 (gas phase process for the preparation of (substituted) pyridine from acetaldehyde, formaldehyde, and ammonia in the presence of zeolite based catalysts)

IT Group VIII element oxides

Oxides (inorganic), uses

Silicalites (zeolites)

Zeolite HZSM-5

Zeolites (synthetic), uses

RL: CAT (Catalyst use); USES (Uses)

(gas phase process for the preparation of (substituted) pyridine from acetaldehyde, formaldehyde, and ammonia in the presence of zeolite based catalysts)

IT Cyclocondensation reaction catalysts

(zeolites; gas phase process for the preparation of (substituted) pyridine from acetaldehyde, formaldehyde, and ammonia in the presence of zeolite based catalysts)

IT 1314-13-2, Zinc oxide, uses 1327-33-9, Antimony oxide 11104-61-3, Cobalt oxide

RL: CAT (Catalyst use); USES (Uses)

(gas phase process for the preparation of (substituted) pyridine from acetaldehyde, formaldehyde, and ammonia in the presence of zeolite based catalysts)

IT 108-99-6P, 3-Picoline 110-86-1DP, Pyridine, substituted

110-86-1P, Pyridine, preparation

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

```

      (gas phase process for the preparation of (substituted) pyridine from
      acetaldehyde, formaldehyde, and ammonia in the
      presence of zeolite based catalysts)
IT 56-23-5, Carbon tetrachloride, uses 71-43-2, Benzene, uses 75-15-0,
Carbon disulfide, uses 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
      (gas phase process for the preparation of (substituted) pyridine from
      acetaldehyde, formaldehyde, and ammonia in the
      presence of zeolite based catalysts)
IT 50-00-0, Formaldehyde, reactions 75-07-0, Acetaldehyde,
reactions 7664-41-7, Ammonia, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
      (gas phase process for the preparation of (substituted) pyridine from
      acetaldehyde, formaldehyde, and ammonia in the
      presence of zeolite based catalysts)

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=> d his

(FILE 'HOME' ENTERED AT 14:37:22 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:37:31 ON 05 MAY 2008

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L1 46906 S ACETALDEH?
L2 775574 S NH3 OR AMMON?
L3 3622 S L1 AND L2
L4 182 S L3 AND PICOLIN?
L5 1 S L4 AND HETEROPOL?
L6 12670 S SILICOTUNGST? OR PHOSPHOTUNGST? OR PHOSPHOMOLYBD? OR VANADOTUN
L7 1 S L6 AND L4
L8 132 S L4 AND CATALYST?
L9 121 S L8 AND PY<2004

```

=> s picoline/p

'P' IS NOT A VALID FIELD CODE

L10 0 PICOLINE/P

=> d his

(FILE 'HOME' ENTERED AT 14:37:22 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:37:31 ON 05 MAY 2008

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L1 46906 S ACETALDEH?
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L7 1 S L6 AND L4
L8 132 S L4 AND CATALYST?
L9 121 S L8 AND PY<2004
L10 0 S PICOLINE/P

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=> s 2-picoline or 4-picoline

9171131 2

14336 PICOLINE

5112 2-PICOLINE

(2(W)PICOLINE)

5597274 4
14336 PICOLINE
4173 4-PICOLINE
(4(W)PICOLINE)

L11 7769 2-PICOLINE OR 4-PICOLINE

=> s l11 and l4
L12 66 L11 AND L4

=> s l12 and py<2004
22/67171 PY<2004
L13 63 L12 AND PY<2004

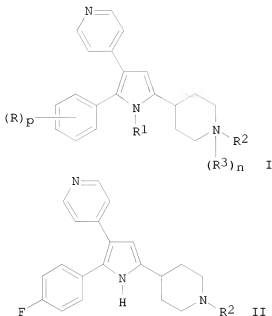
=> d ibib abs 1-10

L13 ANSWER 1 OF 63 CA COPYRIGHT 2008 ACS on STN
ACCESSION NUMBER: 134:366802 CA
TITLE: Diaryl piperidyl pyrrole derivatives useful as
antiprotozoal agents
INVENTOR(S): Biftu, Tesfaye; Feng, Danqing D.; Liang, Gui-Bai;
Ponpipom, Mitree M.; Qian, Xiaoxia; Fisher, Michael
H.; Wyvratt, Matthew J.
PATENT ASSIGNEE(S): Merck & Co., Inc., USA
SOURCE: PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001034149	A1	20010517	WO 2000-US30747	20001109 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2390100	A1	20010517	CA 2000-2390100	20001109 <--
EP 1278520	A1	20030129	EP 2000-978439	20001109 <--
EP 1278520	B1	20060301		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003527336	T	20030916	JP 2001-536147	20001109 <--
NZ 518718	A	20040326	NZ 2000-518718	20001109
AU 781552	B2	20050526	AU 2001-15904	20001109
AT 318600	T	20060315	AT 2000-978439	20001109
ES 2257336	T3	20060801	ES 2000-978439	20001109
US 6291480	B1	20010918	US 2000-710147	20001110 <--
US 6384052	B1	20020507	US 2000-709959	20001110 <--
ZA 2002003685	A	20030605	ZA 2002-3685	20020509 <--
PRIORITY APPLN. INFO.:			US 1999-165142P	P 19991112
			WO 2000-US30747	W 20001109

OTHER SOURCE(S):
GI

MARPAT 134:366802



AB Trisubstituted pyrroles I are antiprotozoal agents (no data), useful in the treatment and prevention of protozoal diseases in human and animals, including the control of coccidiosis in poultry [wherein: n = 0-1; p = 1-3; R = halo; R1 = H or alkyl; R2 = (un)substituted alk(en/yn)yl, cycloalkyl(alkyl), (hetero)aryl(alkyl); R3 = O or CH3; with 3 specific exclusions]. Approx. 100 compds. were prepared For instance, 4-picoline was lithiated and condensed with 4-FC6H4CONMeOMe, and the resulting ketone was deprotonated and coupled with 4-(2-iodoacetyl)-1-(benzyloxycarbonyl)piperidine to give a 1,4-diketone. Cyclization of this with ammonium acetate and deprotection gave pyrrole intermediate II [R2 = H], which was reductively N-alkylated by acetaldehyde and NaBH(OAc)3 to give title compound II [R2 = Et].

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 2 OF 63 CA COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 129:55695 CA

TITLE: Studies on synthesis of 2 & 4-picoline-correlation of acidity with the catalytic activity

AUTHOR(S): Roy, Sisir K.; Ghosh, Banikar; Roy, Shyam K.

CORPORATE SOURCE: Central Fuel Research Institute, Dhanbad, 828108, India

SOURCE: Studies in Surface Science and Catalysis (1998), 113(Recent Advances in Basic and Applied Aspects of Industrial Catalysis), 713-719

CODEN: SSCTDM; ISSN: 0167-2991

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The catalytic vapor phase synthesis of pyridine bases, namely 2- & 4-picoline through cyclodehydrogenation of acetaldehyde and ammonia was carried out. Metal oxide (CdO, ZnO, ThO₂) modified amorphous silica-alumina and crystalline aluminosilicate ZSM-5 zeolites were active and selective catalysts towards formation of lower pyridine bases. Pretreatment methods, affect the activity and selectivity of the catalysts. Metal modified crystalline aluminosilicate ZSM-5 is more selective than amorphous silica-alumina for the formation of 2- & 4-picoline. A reaction mechanism is proposed for the catalyst reaction.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 3 OF 63 CA COPYRIGHT 2008 ACS ON STN

ACCESSION NUMBER: 128:325618 CA

TITLE: Studies of environmental tobacco smoke generated by different cigarettes

AUTHOR(S): Nelson, Paul R.; Kelly, Susan P.; Conrad, Fred W.

CORPORATE SOURCE: R.J. Reynolds Tobacco Company, Bowman Gray Technical Center, Winston-Salem, NC, USA

SOURCE: Journal of the Air & Waste Management Association (1998), 48(4), 336-344

CODEN: JAWAFC; ISSN: 1096-2247

PUBLISHER: Air & Waste Management Association

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A method was developed to reproducibly measure environmental tobacco smoke (ETS) components generated by different cigarettes. Measurements were carried out in an unventilated, controlled environment chamber. True ETS (the aged and diluted combination of exhaled mainstream plus sidestream smoke) was generated by human smokers. To reliably quantitate components normally present at trace levels, the comparisons were carried out at elevated ETS concns. (greater than 40 times those typically encountered in "real-world" settings). The method was applied to four com. available cigarettes and a cigarette prototype that primarily heats tobacco. Forty-three properties and components of the gas and particulate phase of ETS generated by the different cigarettes were measured. Good precision of measurement was obtained both within and between tests. Statistically significant differences in the concentration of ETS components were observed among the different com. cigarettes and between the com. and prototype cigarettes. Most ETS components from the prototype cigarette were reduced by >90% when compared to the com. cigarettes. The method was used to determine the effect of cigarette design changes on the generation of ETS.

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 4 OF 63 CA COPYRIGHT 2008 ACS ON STN

ACCESSION NUMBER: 127:273987 CA

TITLE: Feed forward back-propagation neural networks and their use in predicting the acute toxicity of chemicals to the fathead minnow. [Erratum to document cited in CA127:132092]

AUTHOR(S): Kaiser, Klaus L. E.; Niculescu, Stefan P.; Schuurmann, Gerrit
 CORPORATE SOURCE: National Water Research Institute, Environment Canada, Burlington, ON, L7R 4A6, Can.
 SOURCE: Water Quality Research Journal of Canada (1997), 32(4), 855
 CODEN: WQRCFA; ISSN: 1201-3080
 PUBLISHER: Canadian Association on Water Quality
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Printing errors are noted for lines 32-33 on page 642; line 29 on page 643; lines 5, 6, and 9 on page 644; line 17 on page 648; line 3 on page 649; lines 1 and 3 on page 649; and line 1 on page 650. The errors involved capitalization, subscript/superscript use, and use of # rather than \leq with variables and equations.

L13 ANSWER 5 OF 63 CA COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 127:132092 CA
 TITLE: Feed forward backpropagation neural networks and their use in predicting the acute toxicity of chemicals to the fathead minnow
 AUTHOR(S): Kaiser, Klaus L.E.; Niculescu, Stefan P.; Schuurmann, Gerrit
 CORPORATE SOURCE: National Water Research Institute, Environment Canada, Burlington, ON, L7R 4A6, Can.
 SOURCE: Water Quality Research Journal of Canada (1997), 32(3), 637-657
 CODEN: WQRCFA; ISSN: 1201-3080
 PUBLISHER: Canadian Association on Water Quality
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Various aspects connected to the use of feed forward backpropagation neural networks to build multivariate QSARs based on large data sets containing considerable amts. of important information are investigated. Based on such a model and a 419 compound data set, the explicit equation of one of the resulting multivariate QSARs for the computation of toxicity to the fathead minnow is presented as function of measured Microtox, logarithms of mol. weight and octanol/water partition coefficient, and 48 other functional group and discrete descriptors.
 REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 6 OF 63 CA COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 126:117851 CA
 TITLE: The reaction of ammonia and ethanol or related compounds towards pyridines over high-silica zeolites with medium pore size
 AUTHOR(S): le Febre, R. A.; Hoefnagel, A. J.; van Bekkum, H.
 CORPORATE SOURCE: Lab. Org. Chem. Catalysis, Delft Univ. Technol., Delft, 2628, Neth.
 SOURCE: Recueil des Travaux Chimiques des Pays-Bas (1996), 115(11/12), 511-518
 CODEN: RTCFA3; ISSN: 0165-0513
 PUBLISHER: Elsevier
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB Pyridine bases were formed by the reaction of ethanol and ammonia

over zeolite Nu-10 in the presence of oxygen, which was shown to play an essential role. The use of different proton-introduction procedures resulted in different activities and selectivities of the catalyst. H-Nu-10 and H-ZSM-5 showed substantially higher pyridine selectivity than H-mordenite. In order to clarify the reaction mechanism of the title reaction, several other small amines and oxygenates were tested in the presence/absence of oxygen with respect to their selectivity towards pyridines. Zeolitic acid sites were shown to catalyze the dehydrogenation of ethanol, together with condensation, cyclization and aromatization, while structural defects probably produced oxidation products such as acetaldehyde and formaldehyde which are thought to play an important role in the reaction. The use of methylamine instead of ammonia greatly enhanced the pyridine selectivity.

REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 7 OF 63 CA COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 124:343061 CA
 TITLE: Synthesis of pyridine and picolines over modified silica-alumina and ZSM-5 catalysts
 AUTHOR(S): Rao, R. Ramachandra; Kulkarni, S. J.; Subrahmanyam, M.; Rao, Rama
 CORPORATE SOURCE: Indian Inst. Chemical Technology, Hyderabad, 500 007, India
 SOURCE: Reaction Kinetics and Catalysis Letters (1995), 56(2), 301-9
 CODEN: RKCLAU; ISSN: 0304-4122
 PUBLISHER: Akademiai Kiado
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB In the reaction of acetaldehyde, formaldehyde and ammonia over HZSM-5 (Si/Al=280), PbZSM-5 and WZSM-5 catalysts at 420°C, 0.5 h⁻¹ weight hourly space velocity, the total yields of pyridine and 3-picoline obtained were 58.2, 42.8 and 78.3 weight% based on aldehydes, resp. In the reaction of acetaldehyde and ammonia over typical Pb-SiO₂-Al₂O₃ (20% PbO), W-SiO₂-Al₂O₃ (10% W), Pb-Cr-SiO₂-Al₂O₃ (F) and Pb-Cu-SiO₂-Al₂O₃ (E) catalysts at 420°C, 0.5 h⁻¹ W.H.S.V., the yields of 2-picoline and 4-picoline obtained were 51.1, 66.1, 80.6 and 53.7 weight%, resp.

L13 ANSWER 8 OF 63 CA COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 122:290721 CA
 TITLE: Synthesis of pyridine and 3-alkylpyridine via zeolite-catalyzed heterocyclization of ammonia with carbonyl compounds
 INVENTOR(S): Angevine, Philip J.; Chu, Cynthia T. W.; Potter, Thomas C.
 PATENT ASSIGNEE(S): Mobil Oil Corp., USA
 SOURCE: U.S., 8 pp.
 CODEN: USXXAM
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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US 5395940	A	19950307	US 1993-73213
PRIORITY APPLN. INFO.:			US 1993-73213
OTHER SOURCE(S):	CASREACT 122:290/721		

AB An improved process is provided for selectively synthesizing pyridine and 3-alkylpyridine in high yield by reacting ammonia and a carbonyl reactant selected from the group consisting of formaldehyde, an aldehyde containing from 2 to 4 carbon atoms, a ketone containing from 3 to 5 carbon atoms, and mixts. thereof under effective conditions in the presence of a catalyst comprising an active form of a synthetic porous crystalline MCM-49 or synthetic porous crystalline material characterized by an X-ray diffraction pattern including interplanar d-spacings at 12.36 ± 0.4 , 11.03 ± 0.2 , 8.83 ± 0.14 , 6.18 ± 0.12 , 6.00 ± 0.10 , 4.06 ± 0.07 , 3.91 ± 0.07 , and 3.42 ± 0.06 Å, e.g., MCM-22, and recovering from the resulting reaction mixture a product enriched in pyridine and 3-alkylpyridine. Thus, e.g., heterocyclization of a reaction mixture in molar ratio acetaldehyde/formaldehyde/NH₃/H₂ = 1.4/1/3.6/1.6 over MCM-22 catalyst afforded pyridine and 2-, 3-, and 4-picoline yields (selectivity, weight %) of 9.3, 0.6, 4.1, and 0.9, resp., vs. 9.5, 0.6, 3.7, and 0.7, resp., with ZSM-5; total picolines (weight %), 3-picoline (% per charge), and pyridine (% per charge) were 5.6, 4.47, and 10.14, resp., with MCM-22 vs. 5.0, 3.58, and 9.18, resp., with ZSM-5.

L13 ANSWER 9 OF 63 CA COPYRIGHT 2008 ACS on STN
 ACCESSION NUMBER: 119:219240 CA
 ORIGINAL REFERENCE NO.: 119:38917a,38920a
 TITLE: The yeast test: an alternative method for the testing of acute toxicity of drug substances and environmental chemicals
 AUTHOR(S): Koch, Heinrich P.; Hofeneder, Maria; Bohne, Bernd
 CORPORATE SOURCE: Inst. Pharm. Chem., Univ. Vienna, Vienna, Austria
 SOURCE: Methods and Findings in Experimental and Clinical Pharmacology (1993), 15(3), 141-52
 CODEN: MFEFDPX; ISSN: 0379-0355
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB A novel testing procedure has been developed with the aim to replace the traditional LD50 test in vertebrates by a method using a non-pain sensitive organism. Several years of practical experience have proven this method to be a rather quick, simple, inexpensive, outstandingly well reproducible and reliable exptl. technique which yields an estimate for the acute toxicity of drugs, environmental chems., solvents, food additives, pesticides, industrial and waste products, and the like. The model is equivalent to the customary LD50 test in mice, rats and other laboratory animals.

The yeast test, as it has been briefly named, employs ordinary yeast (*Saccharomyces cerevisiae*) in a thermostated incubation mixture with nutrients and trace elements. The test substance is added to this mixture by increasing concentration, and the effect upon the growth rate of the yeast cells is monitored at 30, 90, 150 and 210 min after beginning the experiment by counting the cell number, either in a simple counting chamber under the microscope or, more conveniently, by using an electronic Coulter counter. The effect is expressed as percent growth of the cells in relation to the untreated control. Evaluation of the exptl. data leads to a general toxicity parameter, the mean inhibitory concentration or IC50 value of the compound

under test. Hitherto it was found that the IC50 values of approx. 160 common drugs and other chems. correlate well with the known LD50 values found in animals with the same substances.

L13 ANSWER 10 OF 63 CA COPYRIGHT 2008 ACS ON STN
 ACCESSION NUMBER: 116:58665 CA
 ORIGINAL REFERENCE NO.: 116:10141a,10144a
 TITLE: Synthesis of aliphatic amines and substituted pyridines over HZSM-5 catalyst
 Kulkarni, S. J.; Subrahmanyam, M.
 AUTHOR(S):
 CORPORATE SOURCE: Indian Inst. Chem. Technol., Hyderabad, 500 007, India
 SOURCE: Indian Journal of Chemistry, Section A: Inorganic, Bio-inorganic, Physical, Theoretical & Analytical Chemistry (1991), 30A(12), 1041-3
 CODEN: ICACEC; ISSN: 0376-4710
 DOCUMENT TYPE: Journal
 LANGUAGE: English

AB The reactions of propylene oxide, propylene glycol, ethylene glycol and acetaldehyde with ammonia have been carried out in the range 220-450° with water as diluent. The major products obtained are methylamine, ethylamine, picolines and acetone. The reaction schemes are proposed based on the product distribution. The reactions of acetaldehyde or propylene glycol with ammonia lead to picolines in high yield over HZSM-5 catalyst.

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(FILE 'HOME' ENTERED AT 14:37:22 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:37:31 ON 05 MAY 2008

L1 46906 S ACETALDEH?
 L2 775574 S NH3 OR AMMON?
 L3 3622 S L1 AND L2
 L4 182 S L3 AND PICOLIN?
 L5 1 S L4 AND HETEROPOL?
 L6 12670 S SILICOTUNGST? OR PHOSPHOTUNGST? OR PHOSPHOMOLYBD? OR VANADOTUN
 L7 1 S L6 AND L4
 L8 132 S L4 AND CATALYST?
 L9 121 S L8 AND PY<2004
 L10 0 S PICOLINE/P
 L11 7769 S 2-PICOLINE OR 4-PICOLINE
 L12 66 S L11 AND L4
 L13 63 S L12 AND PY<2004

FILE 'STNGUIDE' ENTERED AT 14:41:20 ON 05 MAY 2008

=> file ca

=> s l6 and zeolit?

126961 ZEOLIT?
 L14 237 L6 AND ZEOLIT?

=> s 114 and py<2004
 22767171 PY<2004
 L15 134 L14 AND PY<2004

=> d kwic

L15 ANSWER 1 OF 134 CA COPYRIGHT 2008 ACS on STN
 TI W-containing mesoporous zeolite catalyst for synthesis of
 glutaraldehyde and its preparation process
 PI CN 1446631 A 20031008
 PATENT NO. KIND DATE APPLICATION NO. DATE

 PI CN 1446631 A 20031008 CN 2003-115307 20030130 <--
 AB The title catalyst is characterized in introducing WO3 active component to
 SBA-15 mesoporous zeolite in its preparation process, where the molar
 ratio of SiO2 to WO3 is 5.8-73.4. The preparation process of the catalyst.
 .
 ST tungsten zeolite catalyst cyclopentene oxidn glutaraldehyde
 prepn
 IT Calcination
 Oxidation catalysts
 Templates
 (preparation of W-containing mesoporous zeolite catalyst for synthesis
 of glutaraldehyde)
 IT Zeolites (synthetic), uses
 RL: CAT (Catalyst use); USES (Uses)
 (preparation of W-containing mesoporous zeolite catalyst for synthesis
 of glutaraldehyde)
 IT 7631-86-9, SBA-15, uses
 RL: CAT (Catalyst use); USES (Uses)
 (mesoporous; preparation of W-containing mesoporous zeolite catalyst
 for synthesis of glutaraldehyde)
 IT 1314-35-8, Tungsten oxide (WO3), uses 1343-93-7, Phosphotungstic
 acid 13472-45-2, Sodium tungstate 15855-70-6, Ammonium tungstate
 RL: CAT (Catalyst use); USES (Uses)
 (preparation of W-containing mesoporous zeolite catalyst for synthesis
 of glutaraldehyde)
 IT 111-30-8P, Glutaraldehyde
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (preparation of W-containing mesoporous zeolite catalyst for synthesis
 of glutaraldehyde)
 IT 142-29-0, Cyclopentene
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (preparation of W-containing mesoporous zeolite catalyst for synthesis
 of glutaraldehyde)
 IT 78-10-4, Tetraethyl orthosilicate
 RL: RCT (Reactant); RACT (Reactant or reagent)
 (reactant for making catalyst; preparation of W-containing mesoporous
 zeolite catalyst for synthesis of glutaraldehyde)
 IT 106392-12-5, P123
 RL: NUU (Other use, unclassified); USES (Uses)
 (template; preparation of W-containing mesoporous zeolite catalyst for
 synthesis of glutaraldehyde)

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(FILE 'HOME' ENTERED AT 14:37:22 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:37:31 ON 05 MAY 2008

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L1 46906 S ACETALDEH?
L2 775574 S NH3 OR AMMON?
L3 3622 S L1 AND L2
L4 182 S L3 AND PICOLIN?
L5 1 S L4 AND HETEROPOL?
L6 12670 S SILICOTUNGS? OR PHOSPHOTUNGS? OR PHOSPHOMOLYBD? OR VANADOTUN
L7 1 S L6 AND L4
L8 132 S L4 AND CATALYST?
L9 121 S L8 AND PY<2004
L10 0 S PICOLINE/P
L11 7769 S 2-PICOLINE OR 4-PICOLINE
L12 66 S L11 AND L4
L13 63 S L12 AND PY<2004

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FILE 'STNGUIDE' ENTERED AT 14:41:20 ON 05 MAY 2008

FILE 'CA' ENTERED AT 14:43:51 ON 05 MAY 2008

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L14 237 S L6 AND ZEOLIT?
L15 134 S L14 AND PY<2004

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=> s l15 and catalyst?

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992995 CATALYST?
L16 101 L15 AND CATALYST?

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=> d kwic

L16 ANSWER 1 OF 101 CA COPYRIGHT 2008 ACS ON STN

TI W-containing mesoporous zeolite catalyst for synthesis
of glutaraldehyde and its preparation process

PI CN 1446631 A 20031008

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1446631	A	20031008	CN 2003-115307	20030130 <--

AB The title catalyst is characterized in introducing WO3 active component to SBA-15 mesoporous zeolite in its preparation process, where the molar ratio of SiO2 to WO3 is 5.8-73.4. The preparation process of the catalyst comprises: (1) dissolving template P123 with HCl aqueous solution, stirring, adding tetra-Et orthosilicate at P123/tetraethyl orthosilicate ratio 1-5%, HCl/tetraethyl orthosilicate. . . calcining 300- 1200° to remove template, and pelletizing. The W compound may be one of H3PO4.12WO3, Na2WO4, and (NH4)2WO4. The catalyst increase the selectivity of glutaraldehyde largely.

ST tungsten zeolite catalyst cyclopentene oxidn
glutaraldehyde prepn

IT Calcination

Oxidation catalysts

Templates

(preparation of W-containing mesoporous zeolite catalyst for
synthesis of glutaraldehyde)

IT Zeolites (synthetic), uses

RL: CAT (Catalyst use); USES (Uses)

(preparation of W-containing mesoporous zeolite catalyst for
synthesis of glutaraldehyde)

IT 7631-86-9, SBA-15, uses

- RL: CAT (Catalyst use); USES (Uses)
(mesoporous; preparation of W-containing mesoporous zeolite catalyst for synthesis of glutaraldehyde)
- IT 1314-35-8, Tungsten oxide (WO₃), uses 1343-93-7, Phosphotungstic acid 13472-45-2, Sodium tungstate 15855-70-6, Ammonium tungstate
RL: CAT (Catalyst use); USES (Uses)
(preparation of W-containing mesoporous zeolite catalyst for synthesis of glutaraldehyde)
- IT 111-30-8P, Glutaraldehyde
RL: IMF (Industrial manufacture); PREP (Preparation)
(preparation of W-containing mesoporous zeolite catalyst for synthesis of glutaraldehyde)
- IT 142-29-0, Cyclopentene
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation of W-containing mesoporous zeolite catalyst for synthesis of glutaraldehyde)
- IT 78-10-4, Tetraethyl orthosilicate
RL: RCT (Reactant); RACT (Reactant or reagent)
(reactant for making catalyst; preparation of W-containing mesoporous zeolite catalyst for synthesis of glutaraldehyde)
- IT 106392-12-5, P123
RL: NUU (Other use, unclassified); USES (Uses)
(template; preparation of W-containing mesoporous zeolite catalyst for synthesis of glutaraldehyde)

=> d 2 kwic

L16 ANSWER 2 OF 101 CA COPYRIGHT 2008 ACS on STN

TI Acid-treated solid superacid catalysts for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate

PI CN 1432628 A 20030730

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1432628	A	20030730	CN 2002-100239	20020110 <--

AB C4-6-isoalkanes are self-alkylated, to manufacture gasoline alkylate blending stock, by contact with a solid acid catalyst in the presence of 10-8000 ppm of a strongly electroneg. element as catalyst additive. Alkylation is carried out at below the critical temperature and pressure

of the isoalkanes (to 300° and 10.0 MPa), at a space velocity of 0.1-20 h⁻¹. The strongly electroneg. element is halogen or hydrogen halides. The solid acid catalysts are selected from heteropoly acids or salts, zeolites, sulfated oxides, supported Bronsted-Lewis solid superacids, solid cation exchange resins, and Bronsted acid-treated or Lewis acid-treated oxides or mol. sieves.

ST isoalkane self alkylation catalyst heteropoly acid; gasoline alkylate isoalkane alkylation acidic catalyst

IT Isoalkanes

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)

(C4-6, self-alkylation of; acid-treated solid superacid catalysts for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate)

IT Cation exchangers

Molecular sieves

(acidic, catalysts containing; acid-treated solid superacid

- catalysts for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate)
- IT Gasoline
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (alkylate blending stock for; acid-treated solid superacid
 catalysts for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate)
- IT Petroleum refining catalysts
 (alkylation, solid superacids; acid-treated solid superacid
 catalysts for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate)
- IT Bronsted acids
 Halides
 Heteropoly acids
 Hydrogen halides
 Lewis acids
 Zeolites (synthetic), uses
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts containing; acid-treated solid superacid
 catalysts for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate)
- IT Heteropoly acids
 RL: CAT (Catalyst use); USES (Uses)
 (salts, catalysts containing; acid-treated solid superacid
 catalysts for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate)
- IT 7446-70-0, Aluminum chloride, uses 7637-07-2, Boron trifluoride, uses
 7647-19-0, Phosphorus pentafluoride 7783-70-2, Antimony pentafluoride
 7784-36-3, Arsenic pentafluoride 7787-62-4, Bismuth pentafluoride
 RL: CAT (Catalyst use); USES (Uses)
 (Lewis acid, catalysts containing; acid-treated solid superacid
 catalysts for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate)
- IT 1309-48-4, Magnesia, uses 1344-28-1, Alumina, uses 7440-44-0, Carbon,
 uses 7631-86-9, Silica, uses 13463-67-7, Titanium oxide, uses
 RL: CAT (Catalyst use); USES (Uses)
 (catalyst support; acid-treated solid superacid
 catalysts for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate)
- IT 12067-99-1, Phosphotungstic acid
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts containing; acid-treated solid superacid
 catalysts for self-alkylation of C-isoalkanes for manufacture of gasoline alkylate)
- IT 75-00-3, Chloroethane 109-65-9, 1-Bromobutane 109-69-3, 1-Chlorobutane
 111-85-3, 1-Chlorooctane 353-36-6, Fluoroethane 359-01-3,
 2-Fluorobutane 373-14-8, 1-Fluorohexane 407-95-4, 2-Fluorooctane
 420-26-8, 2-Fluoropropane 460-13-9, 1-Fluoropropane 463-11-6,
 1-Fluorooctane 540-54-5, 1-Chloropropane 592-50-7, 1-Fluoropentane
 691-42-9, 1,3-Difluorobutane 1190-22-3, 1,3-Dichlorobutane 2366-52-1,
 1-Fluorobutane 7647-01-0, Hydrogen chloride, uses 7664-39-3, Hydrogen
 fluoride, uses 10086-64-3 852572-92-0
 RL: CAT (Catalyst use); USES (Uses)
 (catalysts containing; acid-treated solid superacid
 catalysts for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate)
- IT 75-28-5, Isobutane

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
 (self-alkylation of; acid-treated solid superacid catalysts
 for self-alkylation of C4-6-isoalkanes for manufacture of gasoline alkylate)

=> d his

(FILE 'HOME' ENTERED AT 14:37:22 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:37:31 ON 05 MAY 2008

L1 46906 S ACETALDEH?
 L2 775574 S NH3 OR AMMON?
 L3 3622 S L1 AND L2
 L4 182 S L3 AND PICOLIN?
 L5 1 S L4 AND HETEROPOL?
 L6 12670 S SILICOTUNGST? OR PHOSPHOTUNGST? OR PHOSPHOMOLYBD? OR VANADOTUN
 L7 1 S L6 AND L4
 L8 132 S L4 AND CATALYST?
 L9 121 S L8 AND PY<2004
 L10 0 S PICOLINE/P
 L11 7769 S 2-PICOLINE OR 4-PICOLINE
 L12 66 S L11 AND L4
 L13 63 S L12 AND PY<2004

FILE 'STNGUIDE' ENTERED AT 14:41:20 ON 05 MAY 2008

FILE 'CA' ENTERED AT 14:43:51 ON 05 MAY 2008

L14 237 S L6 AND ZEOLIT?
 L15 134 S L14 AND PY<2004
 L16 101 S L15 AND CATALYST?

=> s zeolite? and heteropoly?

125397 ZEOLITE?
 17591 HETEROPOLY?
 L17 674 ZEOLITE? AND HETEROPOLY?

=> s l17 and catalys?

1045144 CATALYS?
 L18 599 L17 AND CATALYS?

=> s l18 and picoline?

14722 PICOLINE?
 L19 2 L18 AND PICOLINE?

=> d ibib abs kwic 1-2

L19 ANSWER 1 OF 2 CA COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 141:7651 CA

TITLE: Method for producing polyether polyols having low discoloration and high degree of polymerization

INVENTOR(S): Okoshi, Toru; Setoyama, Tooru

PATENT ASSIGNEE(S): Mitsubishi Chemical Corporation, Japan

SOURCE: PCT Int. Appl., 21 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004048440	A1	20040610	WO 2003-JP13650	20031024
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
AU 2003280574	A1	20040618	AU 2003-280574	20031024
CN 1774462	A	20060517	CN 2003-80109115	20031024
JP 2004182974	A	20040702	JP 2003-366048	20031027
US 20050272911	A1	20051208	US 2005-134460	20050523
PRIORITY APPLN. INFO.:			JP 2002-339507	A 20021122
			WO 2003-JP13650	W 20031024
AB	1,3-Propanediols are condensed in the presence of catalysts containing acids and bases to prepare polymers. Thus, 1,3-propanediol 50, pyridine 0.0534, and 95% H2SO4 0.697 g were mixed under N and heated at 155° for 8 h to prepare poly(trimethylene glycol) (I) having mol. weight 4322, Hazen number 64, and yield 37.0 g, compared with 2830, 130, and 36.9, resp., for I prepared in the absence of pyridine.			
REFERENCE COUNT:	7	THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		
AB	1,3-Propanediols are condensed in the presence of catalysts containing acids and bases to prepare polymers. Thus, 1,3-propanediol 50, pyridine 0.0534, and 95% H2SO4 0.697 g were mixed under. . .			
ST	propanediol polymn catalyst acid base; sulfuric acid pyridine			
IT	polymn catalyst propanediol			
IT	Polymerization catalysts (acid and base catalysts for producing polyether polyols having low discoloration and high d.p.)			
IT	Acids, uses Alkali metal salts Bases, uses Heteropoly acids Oxides (inorganic), uses Zeolites (synthetic), uses			
RL:	CAT (Catalyst use); USES (Uses) (acid and base catalysts for producing polyether polyols having low discoloration and high d.p.)			
IT	Polyethers, preparation RL: IMF (Industrial manufacture); PREP (Preparation) (acid and base catalysts for producing polyether polyols having low discoloration and high d.p.)			
IT	Glycols, reactions RL: RCT (Reactant); RACT (Reactant or reagent) (acid and base catalysts for producing polyether polyols having low discoloration and high d.p.)			
IT	Clays, uses RL: CAT (Catalyst use); USES (Uses)			

(activated; acid and base catalysts for producing polyether polyols having low discoloration and high d.p.)

IT Sulfonic acids, uses
 RL: CAT (Catalyst use); USES (Uses)
 (alkanesulfonic; acid and base catalysts for producing polyether polyols having low discoloration and high d.p.)

IT Sulfonic acids, uses
 RL: CAT (Catalyst use); USES (Uses)
 (arenesulfonic; acid and base catalysts for producing polyether polyols having low discoloration and high d.p.)

IT Acids, uses
 RL: CAT (Catalyst use); USES (Uses)
 (inorg.; acid and base catalysts for producing polyether polyols having low discoloration and high d.p.)

IT 98-11-3, Benzenesulfonic acid, uses 104-15-4, p-Toluenesulfonic acid, uses 108-99-6, 3-Picoline 110-86-1, Pyridine, uses 497-19-8, Sodium carbonate, uses 616-47-7, N-Methylimidazole 6674-22-2, DBU 7664-38-2, Phosphoric acid, uses 7664-93-9, Sulfuric acid, uses 7789-21-1, Fluorosulfuric acid
 RL: CAT (Catalyst use); USES (Uses)
 (acid and base catalysts for producing polyether polyols having low discoloration and high d.p.)

IT 31714-45-1P 345260-48-2P, Poly(trimethylene glycol)
 RL: IMF (Industrial manufacture); PREP (Preparation)
 (acid and base catalysts for producing polyether polyols having low discoloration and high d.p.)

L19 ANSWER 2 OF 2 CA COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 111:59971 CA
 ORIGINAL REFERENCE NO.: 111:10169a,10172a
 TITLE: Catalysts and process for condensation of carboxylic anhydrides
 INVENTOR(S): Yokoyama, Yoshio
 PATENT ASSIGNEE(S): Japan
 SOURCE: Eur. Pat. Appl., 11 pp.
 CODEN: EPXXDW
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 306940	A1	19890315	EP 1988-114679	19880908
EP 306940	B1	19920129		
R: DE, FR, GB, IT				
JP 02056248	A	19900226	JP 1988-213804	19880830
JP 05077455	B	19931026		
IN 171421	A1	19921010	IN 1988-CA738	19880902
US 4981982	A	19910101	US 1990-526764	19900523
PRIORITY APPLN. INFO.:			JP 1987-224103	A 19870909
			US 1988-241737	B1 19880908

OTHER SOURCE(S): MARPAT 111:59971

AB Catalysts useful for producing organic compds., e.g., anthraquinone (I) from phthalic anhydride (II) and optionally C₆H₆, comprise ≥1 solid acid substance as major component and an addnl. basic component selected from NH₃ and volatile organic bases and attached to the strong acid

- sites of the solid acid substance. Mixing 1:1:1 (as TiO₂, SiO₂, and MgO) hydrolyzed (EtO)₄Si, TiCl₄, and MgCl₂, washing with water, kneading, shaping, drying, and baking at 500° for 3 h provided 4-6-mm beads, 60 g of which was packed in a stainless steel tube, heated to 380°, and used to condense a feed gas containing 1:10 II-C₆H₆ and 1% NH₃ (diluted with N), producing 98% pure I in 92% selectivity with 34% conversion of II, vs. 78, 34, and 55, resp., in the absence of NH₃.
- TI Catalysts and process for condensation of carboxylic anhydrides
- AB Catalysts useful for producing organic compds., e.g., anthraquinone (I) from phthalic anhydride (II) and optionally C₆H₆, comprise ≥1 solid acid substance. . . .
- ST anthraquinone benzene phthalic anhydride condensation; acid catalyst carboxylic anhydride condensation; ammonia modification
- IT inorg acid catalyst
- IT Heteropoly acids
- RL: CAT (Catalyst use); USES (Uses)
(catalysts, with amines, for condensation of phthalic anhydride)
- IT Amines, uses and miscellaneous
- RL: USES (Uses)
(solid acid catalysts modified with, for condensation of phthalic anhydride)
- IT Condensation reaction catalysts
(solid acids modified with volatile amines, for phthalic anhydride)
- IT Zeolites, uses and miscellaneous
- RL: CAT (Catalyst use); USES (Uses)
(rare earth, catalysts, with amines, for condensation of phthalic anhydride)
- IT 12027-38-2 12067-99-1, Tungsten hydroxide oxide phosphate
- RL: CAT (Catalyst use); USES (Uses)
(catalysts, with amines, for condensation of phthalic anhydride)
- IT 1344-28-1, Aluminum trioxide, uses and miscellaneous 10028-22-5, Ferric sulfate 10043-01-3, Aluminum sulfate
- RL: CAT (Catalyst use); USES (Uses)
(catalysts, with amines, for condensation of phthalic anhydride with benzene)
- IT 1309-48-4, Magnesium oxide, uses and miscellaneous 7631-86-9, Silicon dioxide, uses and miscellaneous 13463-67-7, Titanium dioxide, uses and miscellaneous
- RL: CAT (Catalyst use); USES (Uses)
(catalysts, with ammonia, for condensation of phthalic anhydride with benzene)
- IT 85-44-9, 1,3-Isobenzofurandione
- RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, catalysts for)
- IT 71-43-2, Benzene, reactions 108-88-3, reactions
- RL: RCT (Reactant); RACT (Reactant or reagent)
(condensation of, with phthalic anhydride, catalysts for)
- IT 84-65-1P, Anthraquinone
- RL: PREP (Preparation)
(manufacture of, by condensation of phthalic anhydride and benzene, catalysts for)
- IT 84-54-8P, 2-Methylantraquinone
- RL: PREP (Preparation)
(manufacture of, by condensation of phthalic anhydride with toluene,

catalysts for)

IT 75-31-0, Isopropylamine, uses and miscellaneous 91-22-5, Quinoline, uses
and miscellaneous 109-73-9, n-Butylamine, uses and miscellaneous
110-86-1, Pyridine, uses and miscellaneous 1333-41-1, Picoline
7664-41-7, Ammonia, uses and miscellaneous
RL: USES (Uses)
(solid acid catalysts modified with, for condensation of
phthalic anhydride)

IT 1335-30-4
RL: USES (Uses)
(zeolites, rare earth, catalysts, with amines, for
condensation of phthalic anhydride)

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(FILE 'HOME' ENTERED AT 14:37:22 ON 05 MAY 2008)

FILE 'CA' ENTERED AT 14:37:31 ON 05 MAY 2008

L1 46906 S ACETALDEH?
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L3 3622 S L1 AND L2
L4 182 S L3 AND PICOLIN?
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L6 12670 S SILICOTUNGST? OR PHOSPHOTUNGST? OR PHOSPHOMOLYBD? OR VANADOTUN
L7 1 S L6 AND L4
L8 132 S L4 AND CATALYST?
L9 121 S L8 AND PY<2004
L10 0 S PICOLINE/P
L11 7769 S 2-PICOLINE OR 4-PICOLINE
L12 66 S L11 AND L4
L13 63 S L12 AND PY<2004

FILE 'STNGUIDE' ENTERED AT 14:41:20 ON 05 MAY 2008

FILE 'CA' ENTERED AT 14:43:51 ON 05 MAY 2008

L14 237 S L6 AND ZEOLIT?
L15 134 S L14 AND PY<2004
L16 101 S L15 AND CATALYST?
L17 674 S ZEOLITE? AND HETEROPOLY?
L18 599 S L17 AND CATALYST?
L19 2 S L18 AND PICOLINE?

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L7 1 S L6 AND L4
L8 132 S L4 AND CATALYST?
L9 121 S L8 AND PY<2004

10/806063

L10 0 S PICOLINE/P
L11 7769 S 2-PICOLINE OR 4-PICOLINE
L12 66 S L11 AND L4
L13 63 S L12 AND PY<2004

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L15 134 S L14 AND PY<2004
L16 101 S L15 AND CATALYST?
L17 674 S ZEOLITE? AND HETEROPOLY?
L18 599 S L17 AND CATALYS?
L19 2 S L18 AND PICOLINE?

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---Logging off of STN---

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Executing the logoff script...

=> LOG Y

STN INTERNATIONAL LOGOFF AT 14:47:26 ON 05 MAY 2008